Sept. 8, 1931. H. G. BEEDE 1,822,388

STEAMING VALVE FOR GARMENT PRESSES

Filed July 15, 1929

FIG. 1.

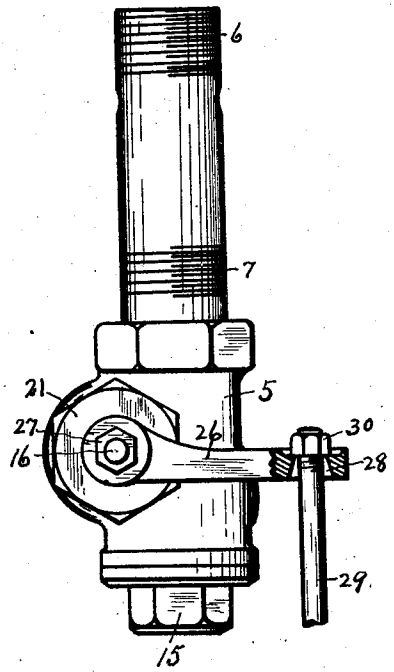


FIG. 2.

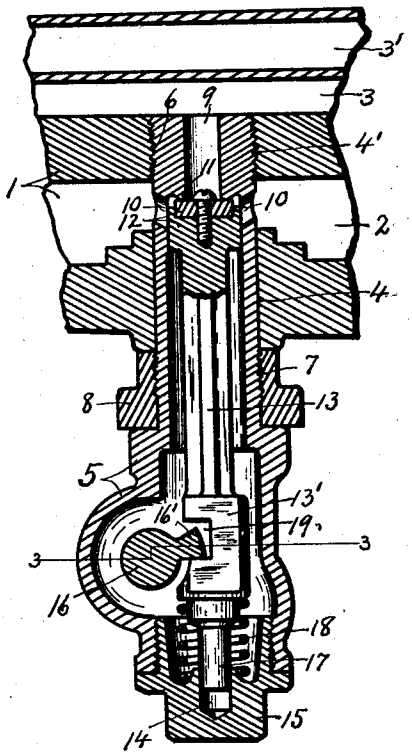
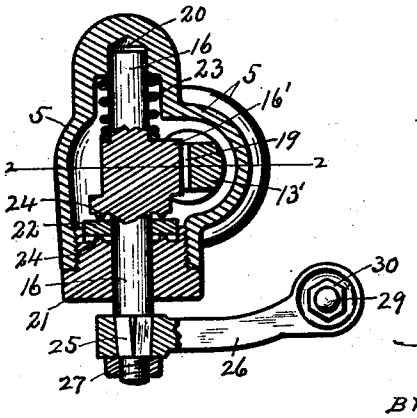


FIG. 3.



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UNITED STATES PATENT OFFICE

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STEAMING VALVE FOR GARMENT PRESSES

Application filed July 15, 1929. Serial No. 378,384.

This invention relates to a steaming board or buck adapted to be used individually or in co-operation with the movable pressing element of a garment pressing machine of the class set forth in my pending application, Serial No. 322,011, filed November 26, 1928, and refers more particularly to a means for controlling the supply of steam or other suitable fluid to the garment for the purpose of softening the same preparatory to pressing, shaping and drying the garment or other fabric.

The steaming board or buck with which the steam controlling device is associated is provided with a steam-heated chamber and a steam-distributing chamber having steam exits in its pressing surface for the emission of steam to the garment thereon and the main object of the present invention is to construct the controlling device in such manner that it may be extended through registering openings in the opposite walls of the heating chamber and provided with an exit port and branch inlet passages connecting the heating chamber with the distributing chamber so that the steam may pass directly from the heating chamber to said distributing chamber and thence into the garment to be moistened.

Another object is to control the inlet and exit ports or passages by means of a slide-valve movable endwise of and within the valve-case so as to open and close communication between the branch inlet passages and exit openings in the valve case.

Another object is to extend the valve-case to the exterior of the steaming element and to provide the external portion of said valve-case with means operable at will for opening and closing the valve.

A further object is to provide means for yieldingly holding the valve in its closed position.

Other objects and uses relating to specific parts of the steaming element will be brought out in the following description.

In the drawings:—

Fig. 1 is a side elevation of the detached steam-controlling device showing one end of the operating crank arm in section.

Fig. 2 is a longitudinal vertical sectional view of the device shown in Fig. 1, showing also the adjacent portion of the steaming board or buck which may, in this instance, be the lower pressing element of a garment pressing machine.

Fig. 3 is a transverse sectional view taken in the plane of line 3—3, Fig. 2.

In order that the invention may be clearly understood, I have shown a portion of the steaming board or buck —1— having a steam-heated chamber —2— and overlying steam-distributing chambers —3— and —3′— which are adapted to communicate with each other in the manner set forth in my pending application above referred to, the outer or upper wall of the chamber —3′— being provided with steam exits similar to that shown in my pending application.

The outer and inner walls representing, in this instance, the lower and upper walls of the steaming board or buck, —1—, are provided with registering openings —4— and —4′—, one of which, as the opening —4—, constitutes a substantially smooth bore while the other wall is threaded internally for receiving the threaded inner end of a valve-case —5— presently described.

This valve-case is elongated vertically and is provided intermediate its ends with a cylindrical portion having its peripheral diameter substantially equal to the bore —4— to fit snugly therein and thereby to form a substantially steam-tight joint therewith.

As previously stated, the inner end of the valve-case —5— is threaded externally at —6— for screw engagement with the threaded bore —4′— which serves to firmly hold the valve-case in fixed operative relation to the steaming board or buck —1— and to permit the steam-controlling device to be easily and quickly removed when necessary or desirable.

The opposite end of the valve-case extends some distance beyond the outer or lower face of the steaming board or buck —1— and is provided adjacent said outer face with a threaded portion —7— adapted to be engaged by a jam nut —8— which also en-

gages the adjacent outer face of the steaming board —1— for additionally holding the valve case in operative position and also to reduce the liability of leakage of steam along the outside of the valve-case to the exterior of the steaming board.

The inner end of the valve-case —5— is provided with a central lengthwise exit port —9— opening into the distributing chamber —3— and operatively connected at its inner end to one or more branch openings —10— registering with the steaming chamber —2— to permit the passage of steam from said chamber to the exit opening —9— and thence into the distributing chamber —3— when the valve is opened.

The inner end of the central passage —9— is surrounded by a valve seat —11— adjacent the outer ends of the branch passages —10— and adapted to be engaged by a slide-valve —12—.

This slide-valve is mounted upon the inner end of an outwardly extending valve stem —13— having its outer end seated and slidable in a socket —14— of a cap section —15— which is screwed or otherwise removably secured in the outer end of the valve-case —5— as shown in Fig. 2.

The outer end of the valve-case —5— is somewhat enlarged or a greater diameter than a portion thereof which passes through the jam nut —8— and outer and inner walls of the heating chamber —2—, said enlarged portion of the valve-case being adapted to receive an enlarged part —13'— of the valve stem —13— and a portion of a rock shaft —16— shown in Figs. 2 and 3.

The extreme outer end of the valve stem —13— is reduced in diameter to correspond approximately to the diameter of the socket —14— in which it is slidable to assist in guiding the valve in its opening and closing movements.

A coil spring —18— is interposed between the inner face of the cap —15— and outer end of the enlargement —13'— around the reduced portion —17— for yieldingly holding the valve —12— in its closed position against the valve seat —11—.

The rock shaft —16— is journaled in the opposite walls of the valve-case —5— at substantially right angles to the axis of the valve stem —13— and at one side thereof and is provided intermediate its ends with a cam or crank arm —16'— projecting into a recess —19— in the adjacent side of the enlarged portion —13'— of the valve stem so that the rocking movement of the shaft —16— in opposite directions will cause the cam member —16'— to engage one or the other of the opposite end walls of the recess —19— for shifting the valve in reversed directions or more properly, for opening the valve against the action of the spring —18—.

One end of the rock shaft —16— is journaled in a complementary socket —20— in one side of the valve-case —5—, the other end of said rock shaft being journaled in a suitable bushing —21— to extend outwardly beyond said bushing which in turn is screwed or otherwise removably secured in the adjacent side of the valve-case, as shown more clearly in Fig. 3.

The intermediate portion of the rock shaft —16— within the valve-case —5— and upon which the cam —16'— is mounted is somewhat larger in diameter than the remaining portions of said shaft so as to form opposite end-thrust bearings for a purpose presently described.

An end-thrust bearing washer —22— is interposed between the outer end of the enlarged intermediate portion of the shaft —16— and inner end face of the bushing —21— while the opposite end of the shaft is surrounded by a coil spring —23— interposed between the adjacent end of the enlarged portion of said shaft and adjacent side wall of the valve-case for yieldingly holding the shaft in engagement with the bearing washer —22— and incidentally holding the bearing washer against the bushing.

The adjacent face of the bushing and the intermediate portion of the shaft —16— is provided with annular beads —24— to reduce friction between those parts and the bearing washer —22— thereby permitting the shaft —16— to be turned more freely without lost motion than would be possible without the use of the annular beads —24—, washer —22— and spring —23—.

The outer end —25— of the rock shaft —16— is angular or square in cross section for receiving one end of a crank arm —26— which is held in place upon the shaft —16— by a lock nut —27— engaging the outer threaded end of said shaft.

The other end of the crank arm —26— is provided with an aperture —28— for receiving one end of an operating member —29— having a shoulder —30— engaging the upper face of the crank arm whereby the downward movement of the operating rod —29— will cause a similar rocking movement of the arm —26— and shaft —16— for opening the valve —12— against the action of the spring —18—.

Operation

Assuming that steam is present in the chamber —2— and that the garment or other fabric to be moistened is placed upon the upper surface of the steaming board or buck —1— and that the valve —12— is in its normal closed position, then, when it is desired to moisten the garment, the rod —29— will be depressed thereby effecting a corresponding rocking movement of the crank

arm —26— and shaft —16— to cause the cam member —16′— to engage the lower wall of the recess —13′— and thereby to open the valve —12— against the action of the spring —18— .

This opening of the valve —12— allows the steam to pass from the chamber —2— through the branch passages —10— and exit passage —9— into the distributing chamber —3— and thence through suitable passages, not shown, into the chamber —3′— from which the steam is free to escape through the exit openings in the upper wall of said chamber to the garment to moisten the latter to render it more pliable preparatory to pressing, shaping and drying.

This steam-controlling device is particularly applicable in the use of steam-distributing chambers of garment pressing machines but obviously may be used in many other relations for controlling other fluids without departing from the spirit of this invention.

What I claim is:—

A steaming valve for garment pressing machines comprising a tubular valve case having one end closed and provided with a laterally projecting chambered offset, and an opening through its other end and provided with a valve-seat surrounding the inner end of said opening, and branch openings adjacent the valve-seat, a valve controlling communication between the branch openings and end opening and having a stem extended beyond the chambered offset, a spring interposed between the closed end of the valve case and valve stem for closing the valve, said stem having a recess in one side registering with said offset, a rocker-shaft journaled in said offset at right angles to the valve stem and provided with a radially projecting crank arm engaging in said recess for opening the valve, and means for rocking said shaft.

In witness whereof I have hereunto set my hand this 24th day of June, 1929.

HERBERT G. BEEDE.